

A METHOD AND SYSTEM FOR WEIGHTED FAIR FLOW CONTROL IN
AN ASYNCHRONOUS METRO PACKET TRANSPORT RING NETWORK

ABSTRACT OF THE DISCLOSURE

5 A method and system for implementing weighted fair flow control on a
metropolitan area network. Weighted fair flow control is implemented using a
plurality of metro packet switches (MPS), each including a respective plurality
of virtual queues and a respective plurality of per flow queues. Each MPS
accepts data from a respective plurality of local input flows. Each local input
10 flow has a respective quality of service (QoS) associated therewith. The data
of the local input flows are queued using the per flow queues, with each input
flow having its respective per flow queue. Each virtual queue maintains a
track of the flow rate of its respective local input flow. Data is transmitted
from the local input flows of each MPS across a communications channel of
15 the network and the bandwidth of the communications channel is allocated in
accordance with the QoS of each local input flow. The QoS is used to determine
the rate of transmission of the local input flow from the per flow queue to the
communications channel. This implements an efficient weighted bandwidth
utilization of the communications channel. Among the plurality of MPS,
20 bandwidth of the communications channel is allocated by throttling the rate at
which data is transmitted from an upstream MPS with respect to the rate at
which data is transmitted from a downstream MPS, thereby implementing a
weighted fair bandwidth utilization of the communications channel.

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